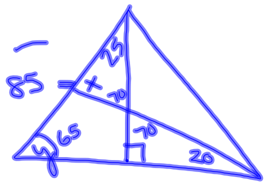
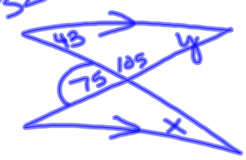
34.



$y = 65$

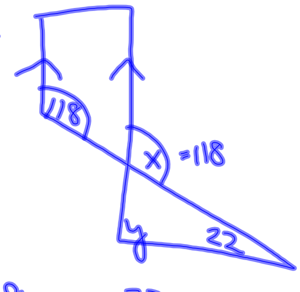
32



$x = 43$

$$\begin{array}{r} 180 \\ -\,148 \\ \hline 32 \end{array} \qquad \begin{array}{r} 75 \\ -\,43 \\ \hline 32 \end{array}$$

33



$118 = y + 22$

$96 = y$

4.2 Apply Congruence and triangles

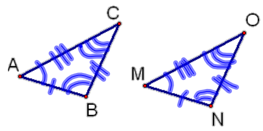
Congruent Triangles—same size and shape

$\triangle ABC \cong \triangle MNO$

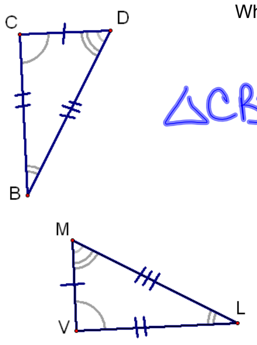
$\angle A \cong \angle M$ $\overline{AB} \cong \overline{MN}$

$\angle B \cong \angle N$ $\overline{BC} \cong \overline{NO}$

$\angle C \cong \angle O$ $\overline{AC} \cong \overline{MO}$



The corresponding parts of congruent triangles are congruent. (CPCTC)



What triangles are congruent?

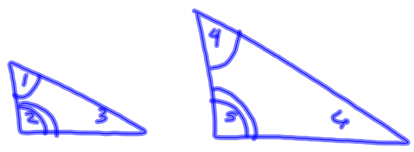
$\triangle CBD \cong \triangle VLM$

If $\triangle THE \cong \triangle SAW$, what parts are congruent?

$\angle T \cong \angle S$
$\angle H \cong \angle A$
$\angle E \cong \angle W$

$\overline{TH} \cong \overline{SA}$
$\overline{HE} \cong \overline{AW}$
$\overline{TE} \cong \overline{SW}$

Theorem 4.3—3rd Angle Theorem—If 2 angles of 1 triangle are $\cong$ to 2 angles of another triangle, then the 3rd angles are $\cong$.



Given: $\angle 1 \cong \angle 4$ $\angle 2 \cong \angle 5$
Concl: $\angle 3 \cong \angle 6$

Theorem 4.4--Properties of Congruent Triangles

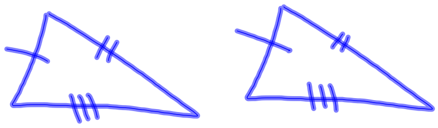
Reflexive $\triangle ABC \cong \triangle ABC$

Symmetric If $\triangle ABC \cong \triangle MNO$, then $\triangle MNO \cong \triangle ABC$

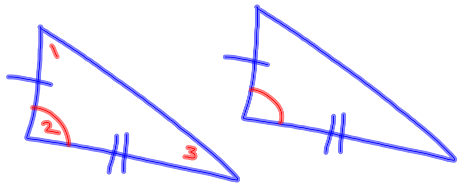
Transitive If $\triangle ABC \cong \triangle MNO$ and $\triangle MNO \cong \triangle XYZ$, then $\triangle ABC \cong \triangle XYZ$

4.3 Prove Triangles Congruent by SSS and SAS (section 4.4)

Postulate 19--Side-Side-Side(SSS)-If 3 sides of one Δ are congruent to 3 sides of another Δ, then the Δs are congruent.



Postulate 20--Side-Angle-Side(SAS)-If 2 sides and the included angle of one Δ are congruent to 2 sides and the included angle of another Δ, then the Δs are congruent.

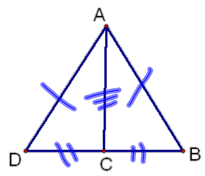


Things to keep in mind for these proofs:
Reflexive
Vertical angles are congruent
Def. of midpoint
Def. of angle bisector and segment bisector
Parallel line facts

and anything else we have learned

Given: C is the midpoint of $\overline{DB}$
$\overline{AD} \cong \overline{AB}$ ✓

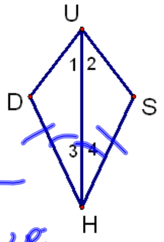
Prove: $\Delta ADC \cong \Delta ABC$



S.	R.
① ~~~~	① Given
② $\overline{DC} \cong \overline{CB}$	② def of midpt
③ $\overline{AC} \cong \overline{AC}$	③ Reflexive
④ $\Delta ADC \cong \Delta ABC$	④ SSS

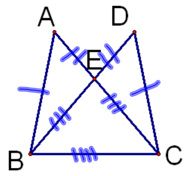
Given: $\overline{HU}$ bisects $\angle DHS$
$\overline{HD} \cong \overline{HS}$

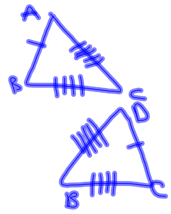
Prove: $\triangle UDH \cong \triangle USH$



S	R
① ~	① Given
② $\angle 3 \cong \angle 4$	② Def. of $\angle$ Bis.
③ $\overline{HU} \cong \overline{HU}$	③ Refl.
④ $\triangle UDH \cong \triangle USH$	④ SAS

Given: $\overline{AB} \cong \overline{DC}$; AE = DE; EB = EC
Prove: $\triangle ABC \cong \triangle DCB$





S	R
① ~	① Given
② $\overline{BC} \cong \overline{BC}$	② Reflexive
③ AE + EC = AC DE + EB = DB	③ SAP
④ AE + EC = DE + EB	④ Add
⑤ AC = DB	⑤ Subst.
⑥ $\overline{AC} \cong \overline{DB}$	⑥ def of $\cong$
⑦ $\triangle ABC \cong \triangle DCB$	⑦ SSS

HW
p228-229
#s 3, 5-10, 16, 20
p236-238
#s 5-7, 24, 26